

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR(S):	Darragh J. Nagle	GROUP ART UNIT:	2616
APPLN. NO.:	10/022,283	EXAMINER:	Roberts, Brian S.
FILED:	Dec. 20, 2001	Confirmation No.:	2361
TITLE:	COMPLEX ADAPTIVE ROUTING SYSTEM AND METHOD FOR A NODAL COMMUNICATION NETWORK		

REPLY TO OFFICE ACTION DATED JUNE 21, 2007

This reply is being filed electronically

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This communication is responsive to the Office Action mailed June 21, 2007 concerning the above-identified application and is timely filed within the three month shortened statutory period for a response. This reply is provided in response to the Office Action in accordance with 37 CFR § 1.116. Applicant submits the following amendment and remarks and respectfully requests the Examiner to reconsider the rejections made in the Action and to allow the claims to issue.

Please amend the above-referenced application as follows:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of the claims, which begins on page 3 of this paper.

Remarks begin on page 12 of this paper.

Amendments to the Specification

Please amend paragraph [0003] of Applicant's original specification as follows:

[0003] More sophisticated ad-hoc networks are also being developed which, in addition to enabling mobile nodes to communicate with each other as in conventional ad-hoc networks, further enable the mobile nodes to access a fixed network and thus communicate with other types of user terminals, such as those on the public switched telephone network (PSTN), and on other networks such as the Internet. Details of these advanced types of ad-hoc networks are described in U.S. Patent ~~Application Serial~~ No. 7,072,650 ~~09/897,790~~ entitled "Ad Hoc Peer-to-Peer Mobile Radio Access System Interfaced to the PSTN and Cellular Networks", issued on July 4, 2006 ~~filed on June 29, 2001~~, in U.S. Patent ~~Application Serial~~ No. 6,807,165 ~~09/815,157~~ entitled "Time Division Protocol for an Ad-Hoc, Peer-to-Peer Radio Network Having Coordinating Channel Access to Shared Parallel Data Channels with Separate Reservation Channel", issued on October 19, 2004 ~~filed on March 22, 2001~~, and in U.S. Patent ~~Application Serial~~ No. 6,873,839 ~~09/815,164~~ entitled "Prioritized-Routing for an Ad-Hoc, Peer-to-Peer, Mobile Radio Access System", issued on March 29, 2005 ~~filed on March 22, 2001~~, the entire content of each being incorporated herein by reference.

Amendments to the Claims

This listing of claims supersedes all prior listing of claims.

1. (currently amended) A method for routing a data packet in a network comprising nodes interconnected by links, the method comprising at a routing node:

receiving said data packet;

extracting routing strategy data from said received data packet, said routing strategy data including information pertaining to at least one routing path via which to route said received data packet to a destination node, each said routing path including at least one other of said nodes;

comparing said routing strategy data with one or more routing information including one or more alternative routing strategies stored within said routing node;

selecting a routing path via which to route said data packet based on said comparing of said routing strategy data;

assigning credits to the routing strategy data and the one or more alternative routing strategies;

selecting a revised routing strategy by comparing the assigned credits when the selected routing path differs from the routing strategy data; and

updating said routing strategy data in said data packet.

2. (original) A method as claimed in claim 1, wherein:

said routing strategy data includes information representing at least some of said nodes that said data packet visited prior to being received by said node.

3. (original) A method as claimed in claim 1, further comprising:

transmitting said data packet to a node along said selected routing path.

4. (previously presented) A method as claimed in claim 1, further comprising:

updating a routing table at said routing node based on said updated routing strategy data.

5. (original) A method as claimed in claim 1, wherein:
said selecting selects as said selected routing path one of said at least one routing path identified by said routing strategy data.
6. (original) A method as claimed in claim 1, wherein:
said selecting selects as said selected routing path a routing path different than any said at least one routing path identified by said routing strategy data.
7. (original) A method as claimed in claim 1, wherein:
said updating includes combining data representing at least two routing paths to generate data representing a different routing path.
8. (original) A method as claimed in claim 1, further comprising:
sending said updated routing strategy data to other said nodes.
9. (original) A method as claimed in claim 1, wherein:
said updating includes generating a new routing strategy.
10. (original) A method as claimed in claim 1, wherein:
said network comprises an ad-hoc network.

11. (currently amended) A node for routing a data packet in a network comprising nodes interconnected by links, the node comprising:

a receiver, for receiving said data packet; and

a controller, for extracting routing strategy data from said received data packet, said routing strategy data including information pertaining to at least one routing path via which to route said received data packet to a destination node, each said routing path including at least one other of said nodes, for comparing said routing strategy data with one or more routing information including one or more alternative routing strategies stored within said routing node, for selecting a routing path via which to route said data packet based on said comparing of said routing strategy data, for assigning credits to the routing strategy data and the one or more alternative routing strategies, and selecting a revised routing strategy by comparing the assigned credits when the selected routing path differs from the routing strategy data, and for updating said routing strategy data in said data packet.

12. (previously presented) A node as claimed in claim 11, wherein:

said routing strategy data includes information representing at least some of said nodes that said data packet visited prior to being received by said node.

13. (previously presented) A node as claimed in claim 11, further comprising:

a transmitter, for transmitting said data packet to a next node along said selected routing path.

14. (previously presented) A node as claimed in claim 11, further comprising:

a routing table stored within a memory,

wherein said controller is further for updating said routing table based on said updated routing strategy data.

15. (previously presented) A node as claimed in claim 11, wherein:

said controller selects as said selected routing path one of said at least one routing path identified by said routing strategy data.

16. (previously presented) A node as claimed in claim 11, wherein:
said controller selects as said selected routing path a routing path different than any said at least one routing path identified by said routing strategy data.
17. (previously presented) A node as claimed in claim 11, wherein:
said controller performs said updating by combining data representing at least two routing paths to generate data representing a different routing path.
18. (previously presented) A node as claimed in claim 11, further comprising:
a transmitter for sending said updated routing strategy data to other said nodes.
19. (previously presented) A node as claimed in claim 11, wherein:
said controller performs said updating by generating a new routing strategy.
20. (previously presented) A node as claimed in claim 11, wherein:
said network comprises an ad-hoc network.

Claims 21-30 - cancelled

31. (currently amended) A method for routing a data packet within an adhoc network comprising

generating a data packet at an originator node, the data packet comprising:

a node history,

a routing strategy, and

a destination node field;

receiving the data packet by a routing node;

when the routing node is not the destination node, at the routing node:

identifying a best routing strategy by comparing the routing strategy to one or more route information stored in the routing node,

assigning credits to each of the routing strategy and the one or more alternative routing strategies and selecting a revised data packet route by comparing the assigned credits,

generating [[a]] the revised data packet route including a revised routing strategy when the best routing strategy differs from the routing strategy, and

transmitting the data packet to a next routing node along a data packet route associated with the best routing strategy; and

repeating the receiving, identifying, generating, and transmitting steps at the next routing node.

32. (previously presented) A method for routing a data packet within an adhoc network as claimed in claim 31, further comprising, prior to the generating step,

storing the one or more route information in a routing table in a memory of the routing node.

33. (previously presented) A method for routing a data packet within an adhoc network as claimed in claim 32, wherein the one or more route information comprises one or more information about at least one other data packet that had previously traversed the routing node selected from a group comprising a routing strategy and a selected destination node.

34. (previously presented) A method for routing a data packet within an adhoc network as claimed in claim 32, further comprising prior to the repeating step:

updating the routing table at the routing node using the node history, the routing strategy, and the destination node of the data packet, and

wherein the repeating step includes repeating the updating step.

35. (previously presented) A method for routing a data packet within an adhoc network as claimed in claim 32, further comprising prior to the repeating step:

updating the routing table at the routing node using the revised routing strategy and the destination node of the data packet, and

wherein the repeating step includes repeating the updating step.

36. (previously presented) A method for routing a data packet within an adhoc network as claimed in claim 32, further comprising at the routing node prior to the receiving step:

receiving a routing table broadcast from a neighbor node; and

updating the routing table using the routing table broadcast.

37. (previously presented) A method for routing a data packet within an adhoc network as claimed in claim 31, wherein the node history comprises one or more data representing one or more nodes through which the data packet has previously passed through.

38. (previously presented) A method for routing a data packet within an adhoc network as claimed in claim 31, wherein the routing strategy comprises a desired route which the data packet is to traverse when traveling to the destination node.

39. (previously presented) A method for routing a data packet within an adhoc network as claimed in claim 31, wherein the routing strategy is associated with one or more routing goals for the data packet.

40. (previously presented) A method for routing a data packet within an adhoc network as claimed in claim 39, wherein the one or more routing goals can are selected from a group of routing goals comprising a route speed, a route performance, a route length, and a route probability of success.

41. (canceled)

42. (currently amended) A method of operation of a node within an adhoc network comprising:

receiving a data packet, the data packet comprising:

a node history,

a routing strategy, and

a destination node field;

comparing the node to the destination node;

when the node is not the destination node,

identifying a best routing strategy by comparing the routing strategy to one or more route information stored in the node,

assigning credits to each of the routing strategy and the one or more alternative routing strategies and selecting a revised data packet route by comparing the assigned credits,

generating ~~[[a]]~~ the revised data packet route including a revised routing strategy when the best routing strategy differs from the routing strategy, and transmitting the data packet to a next node along a data packet route associated with the best routing strategy.

43. (previously presented) A method of operation of a node within an adhoc network as claimed in claim 42, further comprising, prior to the receiving step,
storing the one or more route information in a routing table in a memory of the node.

44. (previously presented) A method of operation of a node within an adhoc network as claimed in claim 43, wherein the one or more route information comprises one or more information about at least one other data packet that had previously traversed the node selected from a group comprising a routing strategy and a selected destination node.

45. (previously presented) A method of operation of a node within an adhoc network as claimed in claim 43, further comprising:
updating the routing table using the node history, the routing strategy, and the destination node of the data packet.

46. (previously presented) A method of operation of a node within an adhoc network as claimed in claim 43, further comprising:
updating the routing table using the revised routing strategy and the destination node of the data packet.

47. (previously presented) A method of operation of a node within an adhoc network as claimed in claim 43, further comprising:
receiving a routing table broadcast from a neighbor node; and
updating the routing table using the routing table broadcast.

48. (previously presented) A method of operation of a node within an adhoc network as claimed in claim 42, wherein the node history comprises one or more data representing one or more nodes through which the data packet has previously passed through.

49. (previously presented) A method of operation of a node within an adhoc network as claimed in claim 42, wherein the routing strategy comprises a desired route which the data packet is to traverse when traveling to the destination node.

50. (previously presented) A method of operation of a node within an adhoc network as claimed in claim 42, wherein the routing strategy is associated with one or more routing goals for the data packet.

51. (previously presented) A method of operation of a node within an adhoc network as claimed in claim 42, wherein the one or more routing goals can be selected from a group of routing goals comprising a route speed, a route performance, a route length, and a route probability of success.

52. (canceled)

REMARKS

In compliance with 35 C.F.R. 116 (b)(1), all amendments herein are being made to either cancel claims or comply with any requirement of form expressly set forth in a previous Office action.

Claim Changes

Claims 1 and 11 have been amended to incorporate the subject matter of claims 41 and 52.

Claim 31 have been amended to incorporate the subject matter of claim 41. Claim 41 is canceled.

Claim 42 has been amended to incorporate the subject matter of claim 52. Claim 52 is canceled.

No amendment made is related to the statutory requirements of patentability unless expressly stated herein. No amendment is made for the purpose of narrowing the scope of any claim, unless Applicant had argued herein that such amendment is made to distinguish over a particular reference or combination of references. Any remarks made herein with respect to a given claim or amendment is intended only in the context of that specific claim or amendment, and should not be applied to other claims, amendments, or aspects of Applicant's invention.

Acknowledgement of Allowable Subject Matter

Applicant acknowledges the allowability of claims 41 and 52 once amended to be rewritten in independent form including all of the limitations of the base claim and any

intervening claims. Applicant has amended the independent claims 1, 11, 31 and 42 to incorporate the allowable subject matter of claims 41 and 52, respectively.

Voluntary Amendment to the Specification

Applicant has voluntarily amended paragraph [0003] of the specification to update the status of referenced patent applications. No new matter is added with this amendment.

Rejection of Claims 1-20, 31-40 and 42-51 under 35 U.S.C. § 102(b) as being anticipated by US. 6,108,710 (Brabson)

Applicant has amended the claims to clarify the invention. Applicant therefore respectfully requests reconsideration of the rejection of claims 1-20, 31-40 and 42-51 under 35 U.S.C. § 102(b) as being anticipated by Brabson as herein amended.

Applicant has carefully reviewed the present application and the cited art and has amended independent claims 1, 11, 31 and 42 to clarify the claimed invention. In particular, independent claims 1 and 11 have been amended to recite “assigning credits to the routing strategy data and the one or more alternative routing strategies, selecting a revised routing strategy by comparing the assigned credits when the selected routing path differs from the routing strategy data.” Similarly, independent claims 31 and 42 have been amended to incorporate the allowable subject matter of claims 41 and 52, respectively, to recite “assigning credits to each of the routing strategy and the one or more alternative routing strategies and selecting a revised data packet route by comparing the assigned credits.”

Applicant submits that claims 1 and 11, as amended, include the limitation of allowable subject matter from claims 41 and 52. Further, claims 31 and 42, as amended, incorporate the subject matter of claims 41 and 52 which claims have been indicated as being allowable in the office action. Therefore, Applicant respectfully submits that claims 1, 11, 31 and 42 are in proper

condition for allowance and requests that claims 1, 11, 31 and 42 may now be passed to allowance.

Dependent claims 2-10, 12-20, 32-40 and 43-51 depend from, and include all the limitations of independent claim 1, 11, 31 and 42, respectively, which claims are shown to be allowable for the reasons given above. Therefore, Applicant respectfully submits that dependent claims 2-10, 12-20, 32-40 and 43-51 are in proper condition for allowance and requests that claims 2-10, 12-20, 32-40 and 43-51 may now be passed to allowance.

Rejection of Claims 1-20, 31-40 and 42-51 under 35 U.S.C. § 102(b) as being anticipated by US. 5,506,838 (Flanagan)

Applicant has amended the claims to clarify the invention. Applicant therefore respectfully requests reconsideration of the rejection of claims 1-20, 31-40 and 42-51 under 35 U.S.C. § 102(b) as being anticipated by Flanagan as herein amended.

Applicant has carefully reviewed the present application and the cited art and has amended independent claims 1, 11, 31 and 42 to clarify the claimed invention. In particular, independent claims 1 and 11 have been amended to recite “assigning credits to the routing strategy data and the one or more alternative routing strategies, selecting a revised routing strategy by comparing the assigned credits when the selected routing path differs from the routing strategy data.” Similarly, independent claims 31 and 42 have been amended to incorporate the allowable subject matter of canceled claims 41 and 52, respectively, to recite “assigning credits to each of the routing strategy and the one or more alternative routing strategies and selecting a revised data packet route by comparing the assigned credits.”

Applicant submits that claims 1 and 11, as amended, include the limitation of allowable subject matter from claims 41 and 52. Further, claims 31 and 42, as amended, incorporates the subject matter of canceled claims 41 and 52 which claims have been indicated as being allowable in the office action. Therefore, Applicant respectfully submits that claims 1, 11, 31 and 42 are in

proper condition for allowance and requests that claims 1, 11, 31 and 42 may now be passed to allowance.

Dependent claims 2-10, 12-20, 32-40 and 43-51 depend from, and include all the limitations of independent claim 1, 11, 31 and 42, respectively, which claims are shown to be allowable for the reasons given above. Therefore, Applicant respectfully submits that dependent claims 2-10, 12-20, 32-40 and 43-51 are in proper condition for allowance and requests that claims 2-10, 12-20, 32-40 and 43-51 may now be passed to allowance.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case. Such action is earnestly solicited by the Applicant. Should the Examiner have any questions, comments, or suggestions, the Examiner is invited to contact the Applicant's attorney or agent at the telephone number indicated below.

Please charge any fees that may be due to Deposit Account 502117, Motorola, Inc.

Respectfully submitted,

July 20, 2007

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